AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 10/623,685 Filing Date: July 21, 2003

Title: DISPERSING AGENTS FOR PIGMENTS OR EXTENDERS BASED ON ACRYLIC ACID ALKYL ESTER POLYMERS

In the Claims

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- 1. (Previously Presented) A dispersing agent for pigments or extenders comprising an acrylic ester-acrylamide polymer having a weight average molecular weight of 1,000 to 50,000 comprising an aminolysis product of an acrylic acid alkyl ester polymer with at least one amine of a formula $NH_2 R^1 Z$, wherein R^1 is a divalent alkylene radical comprising 2 4 carbon atoms and Z is a 5- or 6-membered N-containing heterocycle of up to 2 nitrogen atoms and optionally an oxygen, wherein from 1% to 50% of the ester groups of the acrylic acid alkyl ester units of the polymer are converted to CONH- R^1 -Z groups, and wherein, the acrylic acid alkyl ester polymer is a polymer of acrylic acid alkyl ester monomer alone, or with one or more additional monomers selected from the group consisting of itaconic acid ester, maleic acid ester, methacrylic acid ester, (meth)acrylic acid, styrene, alkyl vinyl ether, vinyl acetate, and at least part of the ester groups of the acrylic ester-acrylamide polymer are transesterified with at least one long chain alcohol selected from the group consisting of oleyl alcohol, stearyl alcohol, benzyl alcohol, methoxy polyethylene glycol, butyl triglycol and allyl polyether.
- 2. (Previously Presented) A dispersing agent of claim 1, wherein at least two amines are combined the acrylic acid alkyl ester polymer, the second an amine being selected from the group consisting of c) saturated or unsaturated aliphatic amines of 6 22 carbon atoms, d) alicyclic amines of up to 6 carbon atoms, e) aryl-substituted alkylamines, f) polyoxyalkylene amines $NH_2-R^1-(O-R^2-)_xO-R^3$ wherein R^1 is a divalent alkylene radical of 2 3 carbon atoms, R^2 is a divalent alkylene radical comprising 2 4 carbon atoms and R^3 is an alkyl radical of 1 4 carbon atoms, and any combination thereof.
- 3. (Cancelled)
- 4. (Original) A dispersing agent of claim 1, wherein the alkyl radical of the acrylic acid

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ester contains 1 - 4 C-atoms.

- (Original) A dispersing agent of claim 1, wherein a catalyst is used for aminolysis. 5.
- (Previously Presented) A dispersing agent of claim 1, wherein the acrylic ester 6. acrylamide polymer has a weight average molecular weight of 2000 – 20,000.
- (Previously Presented) A dispersing agent of claim 1, comprising a phosphoric acid, 7. phosphoric ester, sulfonic acid or carboxylic acid salt of the acrylic ester acrylamide polymer.
- (Previously Presented) A pigment concentrate comprising the dispersing agent of claim 1 8. homogenized together with the pigments and/or extenders, optional organic solvents and/or water, optional binder vehicles and optional lacquer adjuvant substances.
- (Previously Presented) A coating medium, comprising a dispersion of the dispersing 9. agent of claim 1 with a binder vehicle, pigments and/or extenders, and adjuvant substances, and optionally a solvent.
- (Previously Presented) A process for producing a dispersing agent comprising an acrylic 10. ester acrylamide polymer having a weight average molecular weight of 1,000 to 50,000, which process comprises aminolyzing an acrylic acid ester polymer with at least one amine so that from 1% to 50% of the ester groups of the acrylic acid alkyl ester units of the polymer are converted to CONH-R¹-Z groups, and wherein the acrylic acid alkyl ester polymer is a polymer of acrylic acid alkyl ester monomer alone or with one of more additional monomers selected from the group consisting of itaconic acid ester, maleic acid ester, (meth)acrylic acid ester, (meth)acrylic acid, styrene, alkyl vinyl ether and vinyl acetate, and at least part of the ester groups of the acrylic ester-acrylamide polymer are transesterified with at least one long chain alcohol selected from the group consisting of oleyl alcohol, stearyl alcohol, benzyl alcohol, methoxy polyethylene glycol, butyl triglycol and allyl polyether and wherein the amine has a formula NH_2R^1 - Z,

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wherein R^1 is a divalent alkylene radical comprising 2-4 carbon atoms is and Z is a 5- or 6membered N-containing heterocycle of up to 2 nitrogen atoms and optionally an oxygen.

- (Previously Presented) A process for producing a dispersing agent according to claim 10, 11. further comprising aminolyzing with at least two amines, wherein the second amine is selected from the group consisting of c) saturated or unsaturated aliphatic amines of 6-22 carbon atoms, d) alicyclic amines of up to 6 carbon atoms, e) aryl-substituted alkylamines-f) polyoxyalkylene amines NH_2-R^1 - $(O-R^2-)_x$ - O - R^3 wherein R^1 is a divalent alkylene radical of 2 - 3 carbon atoms, R² is a divalent alkylene radical of 2 - 4 carbon atoms and R³ is an alkyl radical of 1 - 4 carbon atoms, and any combination thereof.
- (Previously Presented) A dispersing agent of claim 1 wherein the amine is selected from 12. the group consisting of H-(3-aminopropyl)imidazole, N-(3-aminopropyl) morpholine and N-(2aminoethyl) piperidine.
- (Previously Presented) A process of claim 10 wherein the amine is selected from the 13. group consisting of H-(3-aminopropyl)imidazole, N-(3-aminopropyl) morpholine and N-(2aminoethyl) piperidine.
- (Previously Presented) A dispersing agent of claim 1 wherein the percentage of ester 14. groups converted to CONH-R¹-Z groups is 5% to 40%.
- (Previously Presented) A dispersing agent of claim 1 wherein the percentage of ester 15. groups converted to CONH-R¹-Z groups is 10% to 30%.
- (Previously Presented) A process of claim 10 wherein the percentage of ester groups 16. converted to CONH-R¹-Z groups is 5% to 40%.

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(Previously Presented) A process of claim 1 wherein the percentage of ester groups 17. converted to CONH-R¹-Z groups is 10% to 30%.